New claims 52-86 find support throughout the application including the Drawings and claims as filed originally.

For example, claims 52-59 and 65-68, 70-72 (preferred truncated MHC molecules) are supported at pg. 23, line 16 to pg. 24, line 5. See also pg. 1, lines for disclosure relating to the featured $\beta 1$-$\alpha 1$ peptide binding groove.

New claims 60-62, 73-75 (preferred multivalent MHC molecules) find specific support at pg. 29 lines 20 to page 30 line 13, for example. See pg. 36, lines 17-18 and page 36 line 28 to page 37 line 5 (reported tagged MHC molecules).

New claims 78-80 find specific support at pg. 36, line 23 to pg. 37, line 12.

New method claims 81-86 are supported eg., by disclosure at pg. 37, line 23 to pg. 38, line 3. See also Example 7.

No new matter has been added by virtue of the new claims.

Attached to this submission is a marked-up version of the changes made to the specification and claims. The attached page is captioned "version with markings to show changes made".

If the undersigned can be of any assistance in expediting the prosecution of this application, or if there are any questions concerning the above submission, the Examiner is encouraged to call the undersigned collect at the number given below.

Respectfully submitted,

Date: May 3, 2001

Robert L. Buchanan
Reg. No. 40,927
EDWARDS & ANGELL, LLP
DIKE, BRONSTEIN, ROBERTS & CUSHMAN
Intellectual Property Practice Group
P. O. Box 9169
Boston, MA 02209
Tel. (617) 523-3400
Fax: (617) 523-6440

RLB/ms

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

On page 1, below the title, the following paragraph has been inserted:

This is a continuation of Application No. 09/067,615, filed April 28, 1998, which application is a continuation of USSN 08/596,387 filed on January 31, 1996 (now U. S. Pat. No. 5,869,270). The disclosures of said USSN 09/067,615 and U. S. Pat. No. 5,869,270 are each incorporated herein by reference.

IN THE CLAIMS:

Claims 1-28, 32-34, 38-42, 49-51 have been cancelled without prejudice.

52. (New) A single chain class II MHC molecule comprising;
a peptide-binding groove and
covalently linked in sequence: 1) a class II β chain, 2) a single chain linker, and 3) a class II α chain,
wherein the chain of 1) or 3) or both 1) and 3) lack a functional transmembrane domain and
the chain of 1) or 3) or both 1) and 3) are truncated compared to the full length chain.

53. (New) The MHC molecule of claim 52, wherein the MHC molecule is soluble.

54. (New) The MHC molecule of claim 52, wherein the chain of 1) comprises a β1 domain and the chain of 3) comprise an α1 domain.

55. (New) A DNA construct encoding the MHC molecule of claim 52 or 53.

56. (New) The MHC molecule of claim 52, wherein the single chain linker is linked between the carboxyl terminus of the β chain and the amino terminus of the α chain.

57. (New) The MHC molecule of claim 52, wherein the β and α chains are each independently selected from the group consisting of IE, IA, DR, DQ and DP proteins.

58. (New) The MHC molecule of claim 52 further comprising a presenting peptide non-covalently linked to a peptide binding groove of the MHC molecule.

59. (New) The MHC molecule of claim 52 wherein the MHC molecule is modified to carry a detectable tag.

60. (New) A multivalent MHC complex comprising two or more linked MHC molecules of claim 52.

61. (New) A MHC complex of claim 60 wherein the MHC molecules are linked to immunoglobulin domains.

62. (New) A MHC complex of claim 60 wherein the MHC complex is modified to carry a detectable tag.

63. (New) A method for selecting host cells which express a single chain MHC class II molecule comprising:

introducing into host cells a cloning vector the comprises a DNA construct encoding a single chain MHC class II molecule of claim 52,

culturing the host cells to express the MHC molecule: and

isolating the host cells which express the MHC molecule.

64. (New) A host cell obtained by the method of claim 63, and wherein the host cell comprises a cloning vector comprising a DNA construct encoding the single chain MHC class II molecule.

65. (New) A single chain MHC class II-peptide complex comprising;

a peptide-binding groove;

covalently linked in sequence: 1) a class II β chain, 2) a single chain linker, and 3) a class II α chain, wherein the chain of 1) or 3) or both 1) and 3) lack a functional transmembrane domain and the chain of 1) or 3) or both 1) and 3) are truncated compared to the full length chain; and

presenting peptide covalently linked to the MHC molecule.

66. (New) The MHC complex of claim 65, wherein the complex is soluble.

67. (New) The MHC molecule of claim 65, wherein the chains of 1) and 3) comprise a β1 domain and α1 domain, respectively.

68. (New) The complex of claim 65, wherein the MHC class II molecule comprises the presenting peptide covalently linked to the β chain.

69. (New) A DNA construct encoding for the complex of claim 65, 66, 67 or 68.

70. (New) The complex of claim 65, wherein a presenting peptide linker sequence is interposed between the presenting peptide and the MHC molecule.

71. (New) The complex of claim 65, wherein the β and α chains are each independently selected from the group consisting of IE, IA, DR, DQ and DP proteins.

72. (New) The MHC molecule of claim 65 wherein the MHC molecule is modified to carry a detectable tag.

73. (New) A multivalent MHC complex comprising two or more linked MHC molecules of claim 65.

74. (New) The MHC complex of claim 73 wherein the MHC molecules are linked to immunoglobulin domains.

75. (New) The MHC complex of claim 60 wherein the MHC complex is modified to carry a detectable tag.

76. (New) A method for selecting host cells which express a single chain MHC class II-peptide complex comprising:

introducing into host cells a cloning vector the comprises a DNA construct encoding a single chain class II-peptide complex of claim 65,

culturing the host cells to express the MHC complex; and

isolating the host cells which express the complex.

77. (New) A host cell obtained by the method of claim 76, and wherein the host cell comprises a cloning vector that codes for the single chain MHC class II-peptide complex.

78. (New) A method for identifying presenting peptides that bind a class II MHC molecule comprising;

a) mixing a single chain class II MHC molecule with a peptide library under conditions to allow non-covalent interaction between presenting peptides and the peptide binding groove of the class II MHC molecule; and

b) detecting the interaction between the single chain class II MHC molecule and the presenting peptides,

wherein the single chain class II MHC molecule comprises covalently linked in sequence: 1) a class II β chain, 2) a single chain linker, and 3) a class II α chain, wherein the chain of 1) or 3) or both 1) and 3) lack a functional transmembrane domain.

79. (New) The method of claim 78 wherein the single chain class II molecule is modified to carry a detectable tag.

80. (New) The method of claim 79 wherein the single chain class II molecule is modified with a radioactive label or biotin moiety.

81. (New) A method of inducing an immune response in a mammal comprising administering to the mammal an effective amount of a single-chain class II MHC molecule comprising loaded or covalently linked peptide and that comprises covalently linked in sequence: 1) a class II β chain, 2) a single chain linker, and 3) a class II α chain, wherein the chain of 1) or 3) or both 1) and 3) lack a functional transmembrane domain.

82. (New) The method of claim 81 wherein the MHC molecule is soluble.

83. (New) The method of claim 81 wherein the MHC molecule comprises covalently linked in sequence: 1) presenting peptide, 2) a class II β chain, 3) a single chain linker, and 4) a class II α chain.

84. (New) The method of claim 81 where the MHC molecules are multivalent.

85. (New) The method of claim 81 wherein the mammal is or is susceptiple to being immunocomprimised.

86. (New) The method of claim 85 wherein the immunocomprimised mammal has been exposed to viral infection or chemotherapy.

#166986